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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,970	07/14/2003	Eko N. Onggosanusi	TI-34889	5929
23494	7590	09/19/2006	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			EJAZ, NAHEED	
P O BOX 655474, M/S 3999				
DALLAS, TX 75265			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary	Application No.	Applicant(s)	
	10/618,970	ONGGOSANUSI ET AL.	
	Examiner	Art Unit	
	Naheed Ejaz	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Abstract

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. Abstract is objected to because it is less than 50 words. Correction is required.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-12 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

5. As per claim 1 (taken as a whole), it recites algorithm or calculations but there is not any practical application recited for the claimed limitations.

6. Claims 2-12 are also rejected under 35 U.S.C. 101 as being dependent on a rejected claim, claim 1.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claim 1 also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

9. Claims 2-12 are also rejected under 35 U.S.C. 112, first paragraph as being dependent on a rejected claim, claim 1.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. As per claim 1, it recites, 'after step (b)' (page # 21, line 6) while there is no step mentioned in the claim. Replace 'comprising' (page # 21, line 1) by ---comprising the steps of---.

13. Claims 2-12 are rejected under 35 U.S.C. 112, second paragraph as being dependent on a rejected claim, claim 1.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Beery et al. (5,805,613) (hereinafter, Beery).

16. Refer to claim 1, Beery discloses a method for decoding that includes dividing the received symbols into a number of blocks per codeword and decoding them separately and simultaneously (see Abstract, figures 1 & 3, col.6, lines 24-61) which reads on claim limitations of having 'A method of detection, comprising: (a) receiving a signal representing a set of P symbols where P is a positive integer greater than 2 (figure 1, elements X_1 - X_6) (b) jointly estimating a subset of P_1 symbols of said set of P symbols where P_1 is a positive integer (figure 1, elements X_1 - X_3) (c) after step (b), jointly estimating a subset of P_2 symbols of said set of P symbols where P_2 is a positive integer (figure 1, elements X_4 - X_6) and wherein said subset of P_1 symbols and said subset of P_2 symbols are members of a partition of said set of P symbols and P_1+P_2 is greater than 2' (col.4, lines 38-63) (it is noted in the mentioned column and lines that Beery is teaching hexacode decoders which always include more than 2 symbols therefore reads on claim limitations of having 'set of P symbols and P_1+P_2 is greater than 2').

Claim Rejections - 35 USC § 102

17. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

18. Claims 1, 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyata et al. (6,912,684) (hereinafter, Miyata).

19. Refer to claim 1, Miyata teaches, 'receiving a signal representing a set of P symbols where P is a positive integer greater than 2' (figure 9, element 'Reception sequence', col.19, lines 11-14), 'jointly estimating a subset of P_1 symbols of said set of P symbols where P_1 is a positive integer' (figure 9, elements 171 & 177, col.19, lines 17-19 & 30-37), 'jointly estimating a subset of P_2 symbols of said set of P symbols where P_2 is a positive integer' (figure 9, elements 172 & 178, col.19, lines 17-22 & 38-44), 'subset of P_1 symbols and said subset of P_2 symbols are members of a partition of said set of P symbols and $P_1 + P_2$ is greater than 2' (figure 9, elements X, $Y_a - Z'_{b,p}$, col.20, lines 5-13).

20. Regarding claim 11, Miyata discloses a technique of a calculation means of the soft-input and soft output decoders (col.2, lines 19-27) which reads on claim limitations of having estimation steps that include soft decision.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beery et al. (5,805,613), as applied to claim 1 above, and further in view of Berrou (5,446,747).

23. Regarding claim 10, although Beery teaches maximum likelihood decoding (col.2, lines 4-7) for Hexacode block codes but he does not explicitly disclose maximum likelihood decoding.

In the same field of endeavor, Berrou uses maximum likelihood algorithms for decoding which reads on claim limitations of having estimation steps that include maximum likelihood decision.

It would have been obvious to one ordinary skill in the art to implement the teachings of Berrou into Beery in order to take account of a large number of received symbols hence increase the reliability of the decision as taught by Berrou (col.2, lines 10-14).

Conclusion

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Lim (5,654,986) teaches method and apparatus for decoding trellis coded QAM signals.
- Penther (2002/0167998) discloses channel delay spread adaptive equalization and decoding.
- Hulyalkar et al. (6,850,563) teach data slicer for combined trellis decoding and equalization.

Contact Information

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naheed Ejaz whose telephone number is 571-272-5947. The examiner can normally be reached on Monday - Friday 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2611

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Naheed Ejaz
Examiner
Art Unit 2611

9/13/2006



PANKAJ KUMAR
PRIMARY PATENT EXAMINER